Understanding the Effects of Interviewer Behavior on the Collection of Race Data

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INTRODUCTION

The American Community Survey (ACS) is a new survey the U.S. Census Bureau is testing to replace the Census long form. It is also an innovative approach for producing demographic, housing, social and economic data on a timely basis. The proposed design of the ACS will produce annual estimates for all states, as well as for all cities, counties, metropolitan areas, and population groups of 65,000 or greater. Three and five years of accumulated sample will allow data to be produced for areas as small as census tracts (Griffin, Fischer, Morgan, 2001).

Full implementation of the ACS is scheduled for 2003 budget permitting. In preparation for full implementation, research and development activities began in 1996. The Census 2000 Supplementary Survey (C2SS) was conducted as part of Census 2000 in 1,203 counties. The C2SS used ACS methods and questionnaires and was done to demonstrate the operational feasibility of collecting long form data at the same time as, but in a separate process from, Census 2000.

The C2SS also provides critical data to allow comparisons to data produced from Census 2000. As C2SS data become available, comparisons are being made. The first comparisons made were the basic demographics such as age, sex, race, Hispanic origin, and relationship. Table 1 shows the aggregate comparison of race for Hispanics and non-Hispanics after all data collection had been completed and edits had been done to the write-in responses to move responses to the appropriate race categories. Comparing these race distributions, we see several differences. The most notable finding is that more Hispanic persons in Census 2000 are classified as "some other race" (more than 5 percent compared to less than 4 percent in the C2SS) while in the C2SS more persons are classified as "White" (about 8 percent compared to 6 percent). As this table shows, these differences are highly concentrated in the data for Hispanics, but exist for non-Hispanics too.

	Census 2000	C2SS estimate
TP (1	072 (42 072	
Fotal Household	273,643,273	273,643,274
Population		
opulation	100.00	100.00
Not Hispanic	87.36	87.45
or Latino:	01100	07110
White alone	69.28	*69.59
Black alone	11.79	*11.55
AIAN alone	0.73	0.66
Asian alone	3.63	*3.77
NHOPI alone	0.12	0.14
SOR alone	0.16	*0.21
2+ races	1.65	*1.52
Hispanic or	12.64	1255
Latino:		
White alone	6.05	*7.89
Black alone	0.25	*0.20
AIAN alone	0.15	*0.11
Asian alone	0.04	0.04
NHOPI lone	0.02	0.02
SOR alone	5.34	*3.69
2+ races	0.79	*0.60
* 1.00	· C (1 1: CC	

Table 1. Aggregate Comparison of Census and C2SS Race

* difference significantly different from Census 2000 at ∝=0.10 AIAN: American Indian/Alaska Native NHOPI: Native Hawaiian or Other Pacific Islander

SOR: Some Other Race

BACKGROUND

In preparation for Census 2000, much work was done to study the effect of asking race and Hispanic origin (see asterisked papers in the References Section.) In 1997, the Office of Management and Budget (OMB) issued a directive that included the recommendation to ask a separate Hispanic Origin question first and to allow persons to mark more than one response to the race question. The Census 2000 and C2SS were the first two Census data collection efforts to use these new questions. For respondents unable to identify with a specific race category, OMB approved including "some other race." Census 2000, the C2SS, and a few other Federal data collection efforts include this category. We know that 97 percent of persons who reported "some other race" in Census 2000 were Hispanic (Raglin and Leslie, 2002).

What are some possible reasons for these differences? A look at the data collection methodologies:

Attempting to understand these differences, we began

This paper reports the results of research and analysis undertaken by Census Bureau staff. It has undergone a Census Bureau review more limited in scope than that given to official Census Bureau publications. This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress. The authors thank Charles H. Alexander, Deborah Griffin, Manuel de la Puente, and Eleanor Gerber for their insights and comments.

by looking at how the Census Bureau collects race data in the Census and in the C2SS.

Comparison of Data Collection Methodologies

Although Census 2000 and the C2SS were both large survey operations done by the same agency, there were differences in how the data were collected.

Census 2000 data were collected using two primary modes: self-response, and personal interviews for nonresponse using a paper-and-pencil instrument. About five in six Census households received the short form, which asked for name, relationship to the first person, sex, age, date of birth, Hispanic origin, and race--in that order for each person. (These are referred to as the 100% demographic items.) The other one in six households received the long form, which asked the previous items plus many others. By design, C2SS households did not receive Census 2000 long forms-just short forms.

C2SS data were collected using three successive modes: mail, Computer Assisted Telephone Interviewing (CATI), and Computer Assisted Personal Visit Interviewing (CAPI). All of the forms contained essentially the same content as the Census long form.

There were a few differences in the layout of the race question on the mail forms. The Census 2000 questionnaire asked about each person one by one, using separate pages for each person. In contract, the C2SS collected the 100% items using a grid format similar to the 1990 Census, with names listed down the side and questions across the top. However, there were more differences in the data collection methods between Census 2000 and the C2SS used for the personal visit data collection than for the mail data collections. Table 2 compares Census 2000 and the C2SS data collection methods in the field.

Table 2: Data Collection Differences Affecting Race On Personal Visit Instruments, Census 2000 vs C2SS

Interviewer Questionnaire Medium--

- Census: Paper form, with the race question in a grid like the C2SS self-enumeration form.
- C2SS: A CAPI instrument, which asked all of the 100% items, like race, first for each person (like the C2SS self-enumeration form).

Interviewers-

- Census: About 500,000 temporary interviewers hired for the field operation.
- C2SS: About 1,200 permanent Bureau interviewers who also conduct surveys like the Current Population Survey.

Interviewer training-

- Census: Got about 18 hours of classroom and field training and then sent out to conduct the 6-week data collection effort.
- C2SS: Got 10 hours of training on the ACS CAPI instrument, 5 hour pre-classroom self-study, between 3 and 4 days of training on the survey, paid to review operational details (in memorandum) monthly.

Wording of Race Question-

- Census: "Now choose one or more races for each person. Which race does (this) person consider himself/herself to be?"
- C2SS: "Please choose one or more categories that best indicate (person's) race.¹

Flashcard given to respondents to answer the Race Question-

- Census: Includes the following heading: "You may choose one or more of the following."
- C2SS: Does not include the heading about choosing more than one race.

What did the comparison of race results look like by mode? As described above, there are differences in the reporting of race at the aggregate level for Hispanics. In an effort to better understand these differences, we looked at the aggregate-level data by mode. As Table 3 shows, C2SS interviewers collect more white responses and fewer some other race responses than census enumerators at the aggregate level. When we compared the data collected by mail for both data collection efforts, there was a similar, but not as dramatic, pattern. Additional research is being conducted to understand these differences.

 Table 3.
 Race of all Hispanics based on final tabulated data

Race of all Hispanics	Census 2000	C2SS	
"White" alone	46%	64%	
"Some other race" alone	46%	30%	

These data led us to ask the next question: Are observed differences in the aggregate distributions of race data collected by interviewers due to different race responses for the same people in the two different data collections?

To answer this question we designed a match study that linked unedited person records from Census 2000 to unedited records from the C2SS. Matching was done within matched housing units and then within state. Variables such as first, middle, and last name, name suffix, sex, month of birth, day of birth, and year of birth were

¹ While the term "indicate" may not be problematic, Gerber and Martin, 2001, hypothesize that the phrase "best indicate" is likely to be problematic because the term "best" may invite the speculation that the Census Bureau is asking for the race that is thought to be superior to others.

used for matching. It was critical that we could identify the mode of data collection that was used in both the census and C2SS. The C2SS sample used for this study was the March, April and May 2000 sample which consisted of 157,715 housing units and 369,409 people. Since the race data in our analysis file were unedited, as reported data we had to move ethnicity responses such as "Irish" from the "some other race" category into the appropriate race category.

Table 4 shows race responses in the C2SS and in Census 2000 for matched persons who were Hispanic in either Census 2000 or the C2SS and for whom race data were collected by an interviewer in both surveys. When we compare the race for these matched Hispanics, we see the same pattern as when we compared the data at the aggregate level; that is, the C2SS interviewers recorded more "white" and fewer "some other race" responses for Hispanics than Census 2000 interviewers did.

Table 4. Race of Hispanics when data collected by personal visit Interviewers based on Match Study

Race of Hispanics	Census 2000	C2SS
"White" alone	44%	68%
"Some other race" alone	44%	23%

Survey Methodology literature tells us that collecting race data for Hispanics is challenging and that interviewer behavior can have effects on the collection of race data. Studies have shown that Hispanics have distinct patterns of reporting race and ethnicity and the effect is compounded by question order. In the 1990 Census, the Hispanic Origin question was asked after the race question and roughly 40 percent of Hispanics reported "Other race" (de la Puente and McKay 1995, McKenney, Bennett, Harrison, and del Pinal 1993). This is why Hispanic Origin was asked before race in Census 2000.

Probing is one part of the question-and-answer process that cannot be completely standardized and thus, there is an opportunity for interviewers to be inconsistent across respondents and across interviews. That is one situation in which interviewer-related error can occur (Mangione, Fowler, and Louis, 1992).

Hypothesis and Study Question

The question remains: Why do we have differences in the race data for the same people between the Census and the C2SS? While these differences could result from response error or the difference in the wording of the race question, we hypothesize that the differences in the race responses for Hispanics may be due to differences in interviewer behavior. Specifically, we hypothesize that the C2SS interviewers are more likely than Census enumerators to get specific race responses, such as white, rather than "Some other race" for the following reasons:

• C2SS interviewers are experienced, well-trained, long-term interviewers who work on several different demographic surveys at once. They receive a lot of training, including monthly reminders and self-study refreshers. Census 2000 interviewers were hired just to complete Census 2000. They received about 18 hours of training and then were sent to the field to complete data collection over a brief several month period.

- Unlike C2SS, most demographic surveys Census Bureau interviews work on ask the pre-Census 2000 race and Hispanic origin questions. They ask about Hispanic origin but do not ask for more than one race and do not allow reporting of "some other race".
- Interviewers who have worked on some demographic surveys such as the Consumer Expenditures Survey and Current Population Survey have been trained to mark race by observation if the respondent refuses in certain situations (CE-300 Control Card, 2001 and CPS Interviewing Manual, 1999). Therefore, if a person looks white, the interviewers may consider the person white and record his or her race as white, regardless of response to the Hispanic origin question.
- The C2SS flashcard does not include the instruction to the respondent that they may select more than one race (the Census 2000 flashcard does include this.)

We designed a research project to answer the following question: To what extent do C2SS interviewers use probing or other techniques that might influence the reporting of specific race responses, especially for Hispanic respondents? We are not able to study Census 2000 enumerator behaviors. We can, however, design a study of C2SS CAPI interviewers to learn more about C2SS interviewer behaviors when handling complex situations.

METHODOLOGY

We developed a self-administered questionnaire to ask C2SS interviewers to report how they handle complex situations with the race and Hispanic origin questions most of the time. We used three methods to develop the questionnaire: debriefing of interviewers, expert review, and a small-scale field test. We distributed the survey to the interviewers in Fall 2001. Interviewers mailed completed questionnaires to headquarters in postage-paid envelopes, and we paid interviewers one hour to complete the survey. We took these measures to ensure anonymity and encourage the interviewers to answer freely, without fear that their supervisor would see their answers. We received responses from 915 C2SS interviewers (76 percent response rate). The response rate was consistent across regions.

The survey results represent "reported" not observed behaviors. The instructions on the questionnaires asked the interviewers to mark an X in the box that describes what they would do in various complicated situations. If the way they usually handle a situation is not listed, they were instructed to mark "none of these" and write in what they do. Despite this instruction, between two and 10 percent of the interviewers provided multiple responses to the questions used in this analysis. From the notes on the questionnaires, many wanted to show us the progression of steps they would take to resolve the case. Thus, for this analysis, we calculated the percent of interviewers who marked each response category, whether alone or in combination with other response categories. Because of this, percentages in Tables 5, 6, 7 and 8 sum to more than 100 percentage points.

In an effort to learn about Census 2000 interviewer behavior, we used answers to questions on the survey to categorize interviewers into one of three categories-mostly census experience, some census experience, and no census experience. Of the 915 C2SS interviewers, 58 had "mostly census experience", 256 had "some census experience" and 567 had "no census experience." If we compare responses for interviewers who have "mostly census experience" with responses for interviewers with "no census experience" we might get some insight into how census interviewers may have behaved.

We analyzed responses to the following questions:

- A.5 During a personal visit interview, a respondent answers "yes" to the Hispanic origin question. When you ask race, she says, "I just told you. I'm Hispanic." Do you...
- A.7 An ACS respondent says he and his wife are Mexican in answer to the Hispanic question. He says that his daughter's race is "American." For his daughter's race, do you...
- A.8 An ACS respondent answers the race question with both white and Hispanic. Do you...
- A.10 A respondent looks at the race flashcard and says, "None of these." Do you...

RESULTS

Tables 5, 6, 7 and 8 show what responding C2SS interviewers report they do most of the time when an Hispanic respondent gives an inappropriate response such as "Hispanic" (question A.5), "American" (question A.7), "White and Hispanic" (question A.8) or "none of these" (question A.10). The tables also show the distributions by amount of census experience. The highlighted numbers are statistically different from each other at $\propto = 0.10$.

Looking at these tables, it is clear that C2SS interviewers report that they probe to get specific race responses. If an Hispanic respondent says that their race is "Hispanic" (Table 5) or "American" (Table 6), interviewers use three key methods to get a specific race:

- Explain the answer is not a race
- Repeat the question
- Offer examples.

Most interviewers probe when they get answers like "Hispanic" or "American" in response to the race question. Only about 2 percent of the interviewers say that with an answer of "American," they would determine the appropriate response category without repeating or rewording the question, while none reported doing this after getting an answer of "Hispanic." Also, only about 2 percent of the interviewers say they will assume the race of the person is white. When interviewers get an answer of "white and Hispanic" (Table 7) or "none of these" (Table 8) from an Hispanic respondent, they report that they are more likely to enter a response in "some other race." For example, if the answer is white and Hispanic, they will mark "white", and key "Hispanic" in the "some other race" write-in field. In the case of "none of these," they will go to the "some other race" write-in field and ask the respondent to specify the race.

It is interesting to note that after getting an answer of "white and Hispanic," those interviewers with "No Census" experience were more likely than those with "Mostly Census" experience to ask the respondent to pick the one answer that best indicates their race (17% to 10%), perhaps indicating that they forget that the ACS permits more than one race to be identified. This pattern could offer a potential reason why the C2SS got lower rates of multirace designations than did Census 2000, as shown in Table 1.

 Table 5.
 What do interviewers do when an Hispanic respondent answers "Hispanic" (Question A.5)

Response Number and	Percent of Interviewers (by amount of Census experience) who			
Option	All	Mostly	Some	None
	(n=881)	(n=58)	(n=256)	(n=567)
Ask what country from so can determine race	5	2	7	5
Mark "15" for "some 2 other race" and type "Hispanic"	10	14	13	8
³ Assume the race of the Hispanic person is White	2	0	2	2
4 Determine the response category	0	0	0	0
Reword the race question 5 to make it easier to understand	6	14	7	5
6 Offer examples	18	17	16	19
7 Explain why it is important to answer	2	3	4	1
8 Explain that "Hispanic" isn't a race	30	19	25	32
9 Show the flashcard and ask for 1+ categories,	9	12	10	8
10 Type "R" for refusal to the race question	0	0	0	0
11 Repeat the race question and show the flashcard	28	24	29	28
12 None of these	4	7	4	4

Response Number and Option	Percent of interviewers (by amount of census experence) who			
	All	Mostl y	Some	None
	(n=881)	(n=58)	(n=256)	(n=567)
1 Mark "15" for "some other race" and type "American"	6	3	7	6
2 Mark "15" for "some other race" and type "Mexican"	4	3	5	4
3 Mark "1" for "White"	2	2	3	2
4 Repeat the race question as it appears and show the flashcard	26	24	26	26
5 Determine the appropriate response	2	0	2	2
6 Reword the race question to make it easier to understand	7	10	9	5
7 Offer examples	12	9	11	13
8 Explain that "American" is not a race, and ask for a category listed on the flashcard	43	47	41	44
9 Show the flashcard and ask for one or more categories	6	9	7	6
10 None of these	5	3	5	5

Table 6. What do interviewers do when an Hispanic respondent answers "American" (Question A.7)

 Table 7.
 What do interviewers do when an Hispanic respondent answers "White and Hispanic" (Question A.8)

Response Number and Option	Percent of interviewers (by amount of census experience) who			
	All	Mostly	Some	None
	(n=881)	(n=58)	(n=256)	(n=567)
1 Mark "1" for "White"	17	14	14	18
2 Mark "1" for "White," and ask "Anything else?"	12	10	14	12
3 Mark "1" for "White," "15" for "some other race" and type "Hispanic"	28	43	33	24
4 Mark "15", "some other race", and type "Hispanic"	1	0	1	1
5 Explain that "Hispanic" is not a race, and ask for a category listed	22	19	18	25
6 Show the flashcard and ask for one or more categories, without reading the question	6	5	6	5
7 Ask the respondent to pick the one answer that best indicates their race	16	10	15	17
8 None of these	3	2	5	2

Table 8. What do interviewers do when an	n Hispanic respondent
looks at the race flashcard and says "	'None of these." (A.10)

		Percentage of Interviewers who				
Response Number and Option		All	Mostly	Some	None	
	Option	(n=881)	(n=58)	(n=256)	(n=567)	
1	Show the flashcard and ask for one or more categories	1	0	1	1	
2	Type "R" for refusal to the race question	1	2	1	1	
3	Mark "15" for "some other race" and ask for the race	56	69	60	53	
4	Determine the response category without repeating or rewording the question	1	0	1	1	
5	Reword the race question to make it easier to understand	10	19	7	10	
6	Repeat the race question as it appears and show the flashcard	19	5	19	21	
7	Explain why it is important to answer	7	7	8	6	
8	Ask what country the person is from to determine race	7	3	7	8	
9	None of these	5	2	5	6	

Limitations of the Study of C2SS CAPI Interviewers

There are several limitations of the scope and methodology of this study.

- We are only formally studying the reported behaviors of C2SS interviewers. We do not know how census enumerator behaviors may have contributed to the differences in the findings because there were no formal studies to look at race reporting in Census 2000.
- We ask the interviewers to report on what they do, rather than observing unobtrusively what they actually do, and we ask them to report behavior some time after the fact. For reasons such as social desirability, fear of identification and consequences, or lack of awareness of patterns in their behavior, some unknown number of interviewers may not report what they actually do, introducing bias into the data.
- The scope is limited to CAPI data collection for sample householders who have not responded to either a self-administered form or a CATI interview. The characteristics of these hard-to-enumerate persons may be different from those who responded to one of the earlier modes. The problems encountered and solutions adopted by these CAPI interviewers concerning the Hispanic origin and race questions may or may not be the same as those found in the mail-out or CATI data collections.

CONCLUSIONS AND NEXT STEPS

In this study, we are able to show that in many

complex situations with race for Hispanices, C2SS interviewers did use active probes that might influence reporting of specific race responses. Therefore, the differences we're seeing in the race data for Hispanics may be due to differences in interviewer behavior.

We also found some differences in reported behavior when we compared the data by amount of census experience.

This is our first look at the data. We are doing much more analysis. For example, there was room on the survey for interviewers to provide comments on the race and Hispanic origin questions. We are analyzing these write-in responses now. We also are doing additional analysis and modeling to understand the data better. For example, we looked at the data by amount of census experience. This is highly correlated with length of time working for the Census Bureau as an interviewer. We will model the data to see if we can understand what the main effect is.

More results from the analysis are found in the Schwede, Leslie, and Griffin paper elsewhere in these proceedings.

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